

Application No.: 10/761,101
Response dated: July 26, 2006
Reply to Office Action: February 2, 2006

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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A process for polymerizing olefin(s) comprising, combining said olefin(s), a catalyst composition having a first catalyst component comprising a Group 15 containing bidentate or tridentate ligated Group 3 to 7 metal compound wherein the Group 3 to 7 metal atom is bound to at least one leaving group and to at least two Group 15 atoms, and wherein at least one of the at least two Group 15 atoms is bound to a group 15 or 16 atom through a bridging group; and a second catalyst component, wherein said second catalyst component is a metallocene compound and wherein said first catalyst component and said second catalyst component are added to a polymerization reactor in one of a slurry, a dispersion or a suspension.
2. (Cancelled)
3. (Original) The process of claim 1 wherein metal in the Group 15 containing metal compound is a Group 4 to 6 metal compound.
4. (Original) The process of claim 1 wherein the bridging group is selected from the group consisting of a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, and phosphorus.
5. (Original) The process of claim 1 wherein the Group 15 or 16 atom may also be bound to nothing, a hydrogen, a Group 14 atom containing group, a halogen, or a heteroatom containing group, and wherein each of the two Group 15 atoms are also bound to a cyclic group and may optionally be bound to hydrogen, a halogen, a heteroatom or a hydrocarbyl group, or a heteroatom containing group.

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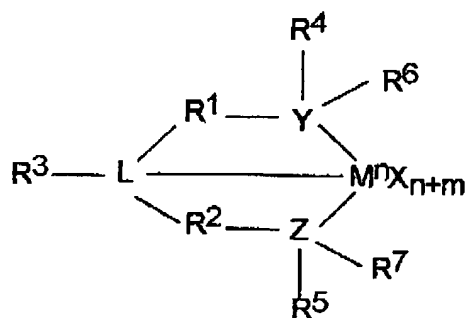
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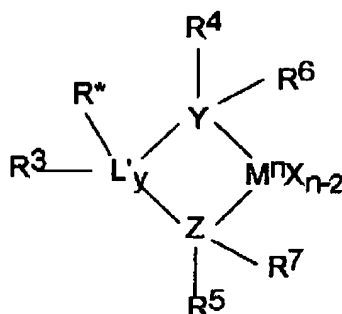
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6. (Previously Presented) The process of claim 1 wherein the Group 15 containing metal compound is represented by the formula:



or



wherein

M is a Group 3 to 7 metal,

each X is independently a leaving group

y is 0 or 1,

n is the oxidation state of M,

m is the formal charge of the Y, Z and L or the Y, Z and L',

L is a Group 15 or 16 element,

L' is a Group 15 or 16 element or Group 14 containing group,

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Y is a Group 15 element,

Z is a Group 15 element,

R¹ and R² are independently a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group having up to twenty carbon atoms, silicon, germanium, tin, lead, or phosphorus,

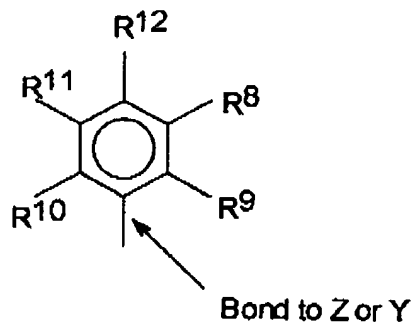
R³ is absent or a hydrocarbon group, hydrogen, a halogen, a heteroatom containing group,

R⁴ and R⁵ are independently an alkyl group, an aryl group, substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic arylalkyl group, a substituted cyclic arylalkyl group or multiple ring system, interconnected to each other,

R⁶ and R⁷ are independently absent, or hydrogen, an alkyl group, halogen, heteroatom or a hydrocarbyl group, and

R^{*} is absent, or is hydrogen, a Group 14 atom containing group, a halogen, a heteroatom containing group.

7. (Original) The process of claim 6 wherein R⁴ and R⁵ are represented by the formula



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wherein

R^8 to R^{12} are each independently hydrogen, a C_1 to C_{40} alkyl group, a halide, a heteroatom, a heteroatom containing group containing up to 40 carbon atoms, wherein any two R groups may form a cyclic group and/or a heterocyclic group, and wherein the cyclic groups may be aromatic.

8. (Previously Presented) The process of claim 7 wherein R^8 to R^{12} are independently a methyl, ethyl, propyl or butyl group.
9. (Previously Presented) The process of claim 8 wherein R^8 to R^{12} are methyl groups, [and R^8 and R^{11} are hydrogen].
10. (Original) The process of claim 9 wherein M is a Group 4 metal, L, Y, and Z are independently nitrogen, R^1 and R^2 are a hydrocarbon radical, R^3 is hydrogen, and R^6 and R^7 are absent.
11. (Original) The process of claim 9 wherein M is a Group 4 metal, L and Z are nitrogen, L' is a hydrocarbyl radical, and R^6 and R^7 are absent.
12. (Currently Amended) The process of claim 1 wherein the second catalyst component comprises a metallocene compound of the general formula

$$L^A L^B [M'] \underline{M} Q_n \text{ or } L^A A L^B [M'] \underline{M} M' Q_n$$
 wherein $[M'] \underline{M}$ is a Group 4, 5 or 6 metal atom,
 L^A and L^B are selected from the group consisting of cyclopentadienyl, tetrahydroindenyl, indenyl, fluorenyl, and substituted versions thereof, L^A and L^B are each bonded to $[M'] \underline{M}$;
 each Q is a monoanionic leaving group,
 A is a divalent bridging group containing at least one Group 13 to Group 16 atom; and

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n is 0, 1 or 2.

13. (Cancelled)
14. (Cancelled).
15. (Currently Amended) The process of claim 12 wherein $[M']$ \underline{M} is a Group 4 metal.
16. (Cancelled)
17. (Previously Presented) The process of claim 1 wherein the catalyst composition further comprises an activator.
18. (Original) The process of claim 1 wherein the polymerization process is a continuous gas or slurry phase process.
19. (Original) The process of claim 1 wherein the olefin(s) are ethylene and one or more other olefin(s).
20. (Previously Presented) The process of claim 1 wherein said first catalyst component and said second catalyst component are present in a molar ratio of 1:99 to 99:1.
21. (Previously Presented) The process of claim 1 wherein said first catalyst component and said second catalyst component are present in a molar ratio of 20:80 to 80:20.
22. -48. Cancelled